

# Scientists now close to eliminating mother-baby HIV transmission, says leading researcher

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Quarraisha Abdool Karim has spent the past three decades studying HIV and AIDS. She has become one of the world's leading epidemiologists and made major contributions to the global understanding of how HIV affects young women.

As associate scientific director of the Centre for the AIDS Programme of Research in South Africa (CAPRISA), Abdool Karim has been honoured by science bodies around the world for her ground-breaking research on HIV prevention.

She told *SciDev.Net* that rapid progress against the disease means scientists are now close to eliminating transmission from infected mothers to infants, which had stood at about 30 to 40 per cent.

**You've been researching HIV for 30 years. How much more do we know now about the virus that causes AIDS, what it does to the body, and how we help women fight it?**

AIDS was inevitably fatal and is now a chronic, manageable condition due to a constellation of factors. We now use the most advanced drug combination for treatment of AIDS patients. Scientists were able to develop antiretrovirals (ARV) and figure out the combination of antiretrovirals that enabled us to control viral replication. We haven't stopped viral replication in human beings, but we are able to control it so that they can live a normal and healthy life.

We used to have transmission rates from infected mothers to infants of about 30 to 40 per cent. We are close to eliminating transmission like that. There were a number of children dying before age five, but we are now seeing growing numbers reach adolescence.

But in terms of preventing HIV infection, particularly sexual transmission, it remains a challenge. When you're talking about risk that's related to sex... it's a

very touchy issue. There's a lot of moral overtones to it. So 'the science' is only the beginning. It's getting it to the individuals who need it - ultimately, that's what for me is the importance of science.

### **How close are we to having a tool for women to be able to prevent HIV? One that's fool-proof and long-term?**

In terms of science, this is probably the most exciting era. In 2010, we shared results from a trial we started in 2006 to evaluate an ARV-based topical agent - tenofovir gel - used by women around sex, and it showed for the first time that we could prevent infection using antiretrovirals. We also talk about it as 'pre-exposure prophylaxis' or PrEP. So that's something that's there today and available for women and men at risk.

Most of the new trials are around two-monthly injectables, or six-monthly injections, or implants that potentially could be used for a whole year, or a tablet that could be taken once a month. One study has been completed on a two-monthly injectable, which has really exciting data. So, what we are seeing in the prevention landscape for men and women is a menu of options. But particularly for women, they look very much like contraceptive options.

### **One thing that strikes me is that you may have the science, but that doesn't always combat the rhetoric. People can just simply choose not to believe what you're saying. How do you deal with that?**

In dealing with COVID-19, as with HIV, we're not unique and isolated. But whether you denied it or not, we were vulnerable and the virus spread. The same with COVID-19. It's a pandemic. It means that globally we all are vulnerable and we've seen countries where leadership have let the public down. And the reality is that none of us are islands.

But there are also issues of trust. And whether it's trust in science and scientists and the medical fraternity, or whether it's trust in the government, they all come together. A lot of the issues around hesitancy and mistrust and so on, what we are seeing in COVID-19, is not in isolation from other things going on.

### **You wear so many hats right now, what are you most proud of when you think about your career?**

As a scientist, one doesn't just do science. One also looks at the issue of teaching, and the engagement with the public; that's really come to the forefront. A lot of the science I've done has been informed by growing up in apartheid South Africa and activism. And so demystifying things, ensuring that people you work with, and particularly the communities and participants in studies, actually understand what their rights are. And one needs to remember one's history in terms of where you come from and how you go, and that definitely shapes you.

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